Research Article

Housing and sanitary conditions in slums of Lucknow, capital of Uttar Pradesh

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Abstract

Background: Slums have been part of the history of most cities, particularly in the early years of industrialization. Rapid urbanization and the mismatch in the provision and maintenance of proper housing conditions result in environmental decay, which further leads to origin and spread of health problems and diseases.

Objective: To study the housing and sanitary conditions of the households residing in urban slums of Lucknow.

Materials and Methods: A community-based cross-sectional study was conducted in urban slums of Lucknow city from February 2014 to September 2014. A total of 384 households were assessed for housing and sanitary conditions through house-to-house survey with the help of predesigned, pretested, and semistructured questionnaire.

Result: Among 384 households included in the study, 77.1% were situated in congested locality with 69.5% having a back to back and continuous type of house setup. About 47.3% and 25.0% of the houses were having inadequate ventilation and lighting, respectively. A total of 74.5% of the houses had unsafe practices for water storage and handling. The practice of handwashing before cooking food and eating was found in 77.9% and 52.6%, respectively. A total of 51.1% of the households reported open field defecation.

Conclusion: This study reveals the need for developing and providing a more effective and comprehensive package of facilities related to housing, water, sanitation, and garbage disposal for urban slums.

KEY WORDS: Housing, sanitation, household, slum

Introduction

United Nations defined slums as communities characterized by insecure residential status, poor quality of housing, overcrowding, and inadequate access to safe water, sanitation, and other infrastructure.[1] About one billion people reside in slums worldwide and experts project their number would double by 2030.[2] Slum population in India constituted 17.5% of urban population in 1981, which increased to 21.3% in 1991 and the trend has continued.[3] This occurs most probably as a result of migration of people from rural areas to the cities in search of better jobs and income prospects. About 4.44 crore people were residing in the urban Uttar Pradesh, of which 64 lakhs were living in urban slums.[2]

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Urban poverty has revealed itself most evidently through urban slums, accommodating the people who normally live below poverty line although these are not the only areas inhabited by the poor.[4] The physical environment of the slums depend on availability of basic amenities such as housing and habitation; along with provision of safe water; and facilities for toilets, drainage, and lighting. Overcrowding in slums leads to increased waste and excreta generation resulting in increased environmental pollution.[5] High levels of pollution, overcrowding, and lack of basic needs and facilities for provision and awareness about health and hygiene services are some of the basic characteristics of slums, which directly and indirectly lead to health problems specially the communicable

disease such as diarrhea and other intestinal and airborne infections. Therefore, this research aimed to study the housing and sanitary conditions of the households residing in urban slums of Lucknow.

Materials and Methods

Study Setting

The study was conducted in the slums of Lucknow city, the capital of Uttar Pradesh.

Study Design

Community-based cross-sectional study.

Study Population

Families residing in urban slums of Lucknow.

Sampling Unit

Households in urban slums of Lucknow.

Sampling

A total of 384 randomly selected households (96 each from the four selected slums) were approached with the help of medicosocial worker and anganwadi worker, and assessed for housing and sanitary condition during the departmental field posting by medical undergraduates. The medical undergraduates were given proper teaching and training for assessment of housing and sanitary conditions. The data were then collected by medical undergraduates in the supervision of postgraduate residents of the department using a predesigned, pretested, and semistructured schedule after obtaining their verbal consent.

Result

Among 384 households included in the study, about four-fifth (79.2%) were of nuclear type, with majority (77.1%) having family members less than or equal to four. Majority (73.6%) of the families belonged to Hindu religion and about half (52.9%) belonged to scheduled caste/tribe social category. About one-third (35.1%) of the families belonged to upper lower socioeconomic class [Table1].

Of the total 384 houses that were assessed for housing condition, majority (77.1%) were situated in congested locality. About 69.5% of the houses were constructed with back to back and continuous type of house setup. Majority (69.5%) were of pukka type, only three houses were of kutcha type. About 61.8% of the houses had nonimpervious type of floor. Dampness was present in about 72.4% of the houses assessed. Almost half (47.3%) and one-fourth (25.0%) of the houses were having inadequate ventilation and lighting, respectively. About two-third (65.4%) of the houses were constructed only up to ground floor. Overcrowding was present in majority (72.1%) of the households. Almost half of the houses were not having a separate kitchen. About 78.6% of the households surveyed were using wood/dung/coal/kerosene stove apart from other sources. Electricity connection was not present in 35 (9.2%) of the households surveyed [Table 2].

Table1: Distribution of families on the basis of household characteristics

Household characteristics	Number	Percentage (%)
Family type		
Nuclear	304	79.2
Joint	80	20.8
Number of family members		
Up to 4	296	77.1
5–6	38	9.9
>6	77	20.0
Religion		
Hindu	283	73.6
Muslim	101	26.4
Social class		
OBC	97	25.2
SC/ST	203	52.9
General	84	21.9
Socioeconomic status[a]		
Upper middle	45	11.7
Lower middle	102	26.5
Upper lower	135	35.1
Lower	102	26.6

OBC, other backward class; SC/ST, Scheduled caste/tribe.
[a]Modified Kuppuswamy socioeconomic scale 2013.

With respect to sanitary conditions, majority (77.6%) of the households reported indiscriminate throwing of the refuse material. The main source of drinking water supply was the piped water supply through Municipal Corporation (52.8%), followed by hand pumps (32.5%), and submersible/booster (14.7%). Almost four-fifth (74.5%) of the houses had unsafe practices for water storage and handling. The practice of handwashing before eating food by all the members was absent in almost half (47.4%) of the households surveyed, although practice of handwashing before cooking food was present in majority (77.9%) of the houses. About 80% of the houses had separate bathroom and almost all the houses had proper drainage system for sullage. Near about half (51.1%) of the households reported open field defecation, whereas 48.9% of the houses used sanitary latrines. Rodents such as rats were present in about 58.4% of the houses whereas mosquito-breeding sites were present in almost majority (78.1%) of the houses [Table 3].

Discussion

This study was conducted to assess the housing and sanitary conditions of the families residing in urban slums. As majority of the study population belonged to low socioeconomic group, this might be the reason for their settlement

Table2: Distribution of families according to housing characteristics

Housing characteristics	Number	%
Type of locale		
Congested	296	77.1
Noncongested	88	22.9
House setup		
Back to back	43	11.1
Continuous	74	19.2
Back to back and continuous	267	69.5
Type of house		
Kutcha	3	0.7
Semi pukka	114	29.6
Pukka	267	69.5
Type of floor		
Nonimpervious	237	61.8
Impervious	147	38.2
Dampness		
Present	278	72.4
Absent	106	27.6
Ventilation		
Adequate	202	52.6
Inadequate	182	47.3
Lightening		
Adequate	288	75.0
Inadequate	96	25.0
Number of storeys		
Only ground floor	251	65.4
One or more than one floor	133	34.6
Overcrowding[a]		
Present	277	72.1
Absent	107	27.9
Separate kitchen for cooking		
Yes	203	52.9
No	181	47.1
Fuel used for cooking[b]		
Wood/dung cake/coal/kerosene stove	302	78.6
Electricity	292	76.0
LPG	200	52.0
Electricity connection		
Available	349	90.8
Not available	35	9.2

LPG, liquefied petroleum gas.
[a]Persons per room criteria used, [b]multiple responses.

Table 3: Distribution of families according to sanitary conditions

Sanitary conditions	Number	%
Method of refuse disposal		
Indiscriminate throwing	298	77.6
Through local refuse collectors	86	22.4
Main source of drinking water supply		
Pipe water (municipality)	203	52.8
Public hand pump	125	32.5
Submersible/booster at home	56	14.7
Drinking water handling and storage practices		
Safe	98	25.5
Not safe	286	74.5
Handwashing practice before eating food[a] (all the members of household)		
Present	202	52.6
Absent	182	47.4
Handwashing practices before cooking food[a]		
Present	299	77.9
Absent	85	22.1
Separate bathroom		
Present	304	79.2
Absent	80	20.8
Drainage for sullage		
Present	381	99.2
Absent	3	0.8
Type of drain (n = 381)		
Pukka	220	57.8
Drain	161	42.2
Excreta disposal		
Open field	197	51.1
Sanitary latrine	187	48.9
Rodents		
Present	224	58.4
Absent	160	41.6
Mosquito-breeding sites		
Present	300	78.1
Absent	84	21.9

[a]With soap and water.

in the underprivileged environmental conditions. Similar reason was also quoted in other studies in which it was opined that slums were the only type of settlement affordable and accessible to poor in cities, where competition for land and profit is intense.[5] Same reason might be the cause for location of majority of houses in congested locality and with back to back and continuous type of house setup. Apart from that, as these habitats were built up without proper planning, they lack proper infrastructure facilities such as proper connectivity with roads and sewage system. Such type of congested locality leads to deteriorated air circulation, raised surrounding temperature and natural lighting, which not only affect the status of health and well-being but also result in health problems such as suffocation, thermal discomfort, and difficulty in vision (especially during the electricity unavailability, when electric appliances could not be used).[6] Also the overcongested locality and house setup in this study might be the reason for inadequate ventilation (47.3%) and lighting (25.0%).

Dampness was found in about 72.4% of the surveyed households, which directly revealed the unplanned and improper construction and maintenance of the houses. This dampness provides an opportunity not only for various pathological fungus to propagate but also leads to nasal stuffiness, throat irritation, coughing or wheezing, eye irritation, or, in some cases, skin irritation.[7] Overcrowding was present in majority of the household, which might be owing to limited space for construction. Overcrowding, other than transmission of infection also affects the privacy and sense of isolation of the individual and may lead to psychosocial stress, leading to unhappiness and increased probability to psychosomatic and mental disorders.[6,8] Almost half of the households were not having separate kitchen, they were using the corner of living room as kitchen. The use of smoke-generating fuel along with non-separated kitchen has cumulative effect as respiratory health hazard along with indoor pollution generation. The practice of indiscriminate throwing of refuse was reported in majority of households. Similar findings were reported in a study conducted in Lucknow slums where 72% of the households dispose their rubbish on road and 6% dispose it off at nearby areas.[9] About 14.7% of the households had their own arrangements for water supply through submersibles or boosters, whereas majority depend on piped water supply through Municipal Corporation, although almost all those who had piped water supply as source of water were not satisfied with the quality and supply hours of water. Similar findings were found in other study.[9] Safe water handling and storage practices were present only in one-fourth of the households, which might result in diarrheal diseases in future especially affecting children as reported in several other studies.[10,11] About four-fifth of the households had separate bathroom for taking bath, which boost up the sense of privacy for an individual and also have an additive effect on personal hygiene maintenance. The presence and connectivity to proper drainage system for sullage (381 of 384) were available to almost all the households but most of them were uncovered, which not only provide opportunity for the insects to breed but also lead to sense of unpleasant odor. Almost half of the households reported that they defecate openly and the major reason cited by the respondents were lack of space in home to construct a toilet. Such open field defecation apart from origin and transmission of infection, also results in sort of visual discomfort and nuisance. The practice of handwashing before cooking food and eating was found in 77.9% and 52.6%, respectively, which is almost similar to a study conducted by Datta et al. who reported practice of handwashing before preparing food (71.86%) and feeding (67.39%)[12] but it was much higher as reported in a study that showed only 53% of the population washed hands with soap after defecation, 38% before eating, and 30% before preparing food.[13]

The housing and sanitary conditions were found suboptimal than standards. Locality of most of the houses was quite congested with poor lighting and ventilation. Apart from that open field defecation, indiscriminate throwing of the refuse, and use of smoke-releasing fuel for cooking were present in most of the households, which directly hamper the health of an individual. However, the study cannot be generalized as our study was conducted only in four slums. Apart from that, it was difficult to establish cause and effect relationship because housing and sanitation include so many facets of environment.

Conclusion

The findings of this study stress the need for developing more effective strategy especially focusing on the urban poor, those residing in slums, to provide better and more efficient facilities related to housing, water, sanitation, and garbage disposal. Action need to be taken to improve the knowledge of population residing in these slums regarding importance of sanitation and hygiene through continuous Information Education and Communication related activities (IEC) to bring out behavioral change. Apart from that strategies to prevent the formation of new slums need to be developed.

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